DOES FOREIGN DIRECT INVESTMENT CROWD OUT DOMESTIC ENTREPRENEURSHIP?

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Abstract

In analyzing firm entry and exit across Belgian manufacturing industries, this paper presents evidence that import competition and foreign direct investment discourage entry and stimulate exit of domestic entrepreneurs. These results are in line with theoretical occupational choice models that predict foreign direct investment would crowd out domestic entrepreneurs through their selections in product and labor markets. However, the empirical results also suggest that this crowding out effect may be moderated or even reversed in the long-run due to the long term positive effects of FDI on domestic entrpreneurship as a result of learning, demonstration, networking and linkage effects between foreign and domestic firms

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1. Introduction

Since Orr's (1971) influential work on entry in Canadian manufacturing, an extensive literature has emerged studying incentives and impediments to firm entry and exit[1], as heavily used measures of entrepreneurial activity in theoretical as well as empirical work.[2] Reflecting the typical closed economy setting of theoretical work on firm formation, most empirical applications in the entry/exit literature have been developed in national industry contexts that focus almost exclusively on domestic supply factors inducing or impeding entry/exit. An exception is Sleuwaegen and Dehandschutter (1991) who analyzed the importance of international demand and supply factors for entry and exit in Belgium.

While recent theoretical work has increasingly distinguished between different types of entry and exit, including domestic entry/exit (i.e. by domestic entrepreneurs) and foreign entry/exit (i.e. by multinational firms), it has continued to disregard the effect of international competition on the entry and exit of domestic entrepreneurs. Instead, research has concentrated on the differential impact of incentives and barriers for respectively domestic and foreign entry/exit (Gorecki (1976), Shapiro (1983), Baldwin and Gorecki (1987), Khemani and Shapiro (1988), Geroski (1991), Mata and Portugal (1997)). The interdependence between domestic and foreign entry/exit however has not yet been analyzed.

By not taking into account the effects of international competition on domestic entrepreneurship, previous studies on entry/exit in (small) open economies may have produced biased results[3]. As shown in Table 1, the aggregate level of import competition and presence of multinational firms (MNEs) was consistently higher in Belgium than in other EC

[1] Notwithstanding previous research has produced a diversity of operational approaches of entrepreneurship reflecting the lack of convergence in the literature toward a single definition of entrepreneurship, we adopt the conventional use in the literature of entry rates as representing the extent of entrepreneurial activity.

[2] For overviews see Siegfried and Evans (1994) and Geroski (1995).

[3] Although Sleuwaegen and Dehandschutter (1991) acknowledge the strong discipline of international competition as being important, import competition and foreign direct investment were not included in their analysis.

countries in 1990 and at the same time the entry rate of domestic firms in Belgium was correspondingly lower. Similarly, in the more recent period 1990-1995 Belgium showed a net outflow of foreign direct investment (FDI) and a simultaneous rise in the number of domestic firms (Table 2). Both observations point to the potential crowding out effect of FDI on domestic entrepreneurship.

INSERT TABLES 1 AND 2 HERE

This paper empirically assesses the role of international competition in the formation of domestic entrepreneurs (firms) by linking domestic entry/exit in Belgium during the years 1990-1995 to import competition and foreign direct investment at the industry level. Based on the predictions of occupational choice models it is hypothesized that domestic entry is negatively affected by increasing import competition and the inflow of FDI. Likewise, in explaining domestic exit, it is expected that import competition and foreign direct investment stimulate the exit of domestic firms.

In addition to assessing the impact of international competition on domestic entrepreneurship, the empirical analysis also explicitly considers the role of structural positive effects of FDI on entry, as put forward by recent theoretical models demonstrating possible complementary effects between foreign and domestic firms (Rodriguez-Clare (1996), Markusen and Venables (1999)). Specifically, it is hypothesized that the demonstration, networking and spillover effects of foreign firms in host countries may actually stimulate local entrepreneurship if the necessary stimulating conditions are created, as recently discussed in the World Investment Report 'Promoting linkages' (UNO (2001)) documenting several (developing) country studies.

While the crowding out effect of FDI on local entrepreneurship has mainly been discussed in developing countries (Caves (1996)), this paper analyzes this effect in the context of Belgium, an open industrialized country. Given the similarity between Belgium and other EC countries like Ireland and Spain in attracting FDI (Sleuwaegen and De Backer (2000)), the results of this analysis are not necessarily limited to Belgium but may carry over to other open economies. The data for the empirical analysis come from a unique database that was obtained by merging two datasets: the files of the Central Balance Sheet Office (National Bank of Belgium) which contain the annual reports of all firms active in Belgian manufacturing, and the foreign firms database of the Federal Planning Bureau which identifies firms active in Belgium that are at least 50% foreign owned.

2. Occupational choice, domestic entrepreneurship and foreign direct investment

Firm formation has traditionally been studied within occupational choice models, in which individuals compare the wage they can earn as a worker with the entrepreneurial income they can obtain if they start their own business. The first theoretical contributions to this line of research essentially predicted that the likelihood of individuals starting a new firm is a positive function of persons' managerial ability (Lucas (1978), Oi (1983)) and a negative function of a persons' risk attitude (Kanbur (1979), Kihlstrom and Laffont (1979)). Later models allowed for both differences in managerial/entrepreneurial ability between individuals and differences in worker ability (reflected in wage differentials) to predict that the best potential entrepreneurs may end up as wage workers (Jovanovic (1994)).

Most occupational choice models have been developed in a closed economy setting. An exception is Grossman (1984) who modeled firm formation in an open economy and analyzed the impact of foreign trade and investment on the formation of domestic entrepreneurs. Grossman showed that import competition and foreign direct investment causes the number of

local entrepreneurs to fall as the result of lower prices on the product market which reduce the entrepreneurial income more than the wage income. As only differences in entrepreneurial skills are taken into account in this model, the most capable individuals become entrepreneurs. While foreign direct investment is similar to import competition with respect to product market competition, the entry of foreign firms generates however an additional effect on domestic entrepreneurship since these firms also crowd out domestic firms on the labor market. This crowding out effect does not only result in a lower number of domestic entrepreneurs but also gives rise to a situation where the best entrepreneurs may become workers in the affiliates of foreign based MNE once differences in worker ability are taking into account and technological superiority of MNEs is recognized.

This additional effect of FDI on the labor market (irrespective of the product market effect) can be illustrated by extending Jovanovic's (1994) model of firm formation to allow for the entry of foreign firms. Consider an economy with one consumption good and two homogeneous factors of production (capital K and labor L). In this economy an individual decides to start their own business instead of working for an established firm according to the following rule:

$$px_i\, F(k,\Sigma_j^N y_j) - rk - \Sigma_j^N wy_j \geq wy_i \qquad (1)$$

where $F(k, \Sigma_j^N y_j)$ is the firm's output, p is the price of the consumption good, r is the rental rate and w is the wage per efficiency unit. The variables x_i and y_i represent respectively the entrepreneurial and worker ability of individual i, while $\Sigma_j^N y_j$ is the sum of worker abilities over the N workers employed in the hypothetical firm and is therefore total labor input to the firm. The left side of expression (1) is the entrepreneurial income the individual gets if he starts up his own business, while the right side is the wage income the individual earns if he chooses to become a wage worker. Profit maximization by firm owners leads to the optimal

choices of capital (k) and labor (l) per firm which, together with the occupational choice expression (1) and the factor market clearing conditions, determine the optimal level of domestic entrepreneurs (m).

An inflow of foreign direct investment, which essentially entails new competition and the transfer of capital and technology exogenous to the conditions prevailing in the domestic market, changes the number of domestic firms in this economy. Since firm specific advantages transferable across borders enable MNEs to compete successfully in foreign countries with a 'better' production technology compared to local firms (OLI-paradigm (Dunning (1993)), the correspondingly higher wages paid by foreign firms[4] skim the domestic labor market and decrease the labor supply for domestic companies at least in the short term (i.e. $dL/dFDI < 0$). Similar to Jovanovic's result with respect to an increase in the capital stock, the comparative statics for the present model indicate that the derivative of m with respect to the labor supply L is positive[5] [6], meaning that an inflow of FDI causes the number of domestic entrepreneurs to fall ($dm/dFDI < 0$). The crowding out of local ventures by foreign firms on the labor market leads to a stronger rise in wages than in entrepreneurial income[7], stimulating people to become workers instead of entrepreneurs. At the same time the average (domestic) firm size increases.

[4] The 'better' technology and capital intensive production process make employees more productive in foreign companies than in domestic companies (see De Backer and Sleuwaegen (2001)). We assume a dual labor market where wage differences between foreign firms and domestic firms may persist. Given the first order conditions, this higher productivity results ceteris paribus in higher wages. Like in other countries (see for an overview Dunning (1993)), foreign firms in Belgium are found to pay significantly higher (average) wages than domestic firms even after taking into account differences in the skill mix of the employment (De Backer (2001)).

[5] Provided that the elasticity of substitution between k and l is less than 1 (see also Lucas (1978) and Jovanovic (1994)).

[6] $dm/dL = m(LF_{ll} + KF_{kl})/(K^2F_{kk} + 2KLF_{kl} + L^2F_{ll})$ where F_{kk}, F_{ll} and F_{kl} are the second order derivatives of the production function F with respect to respectively k, l, and k and l
The positive sign can easily be derived by combining Jovanovic's result ($dm/dk < 0$ or $m(LF_{ll} + KF_{kl})/(K^2F_{kk} + 2KLF_{kl} + L^2F_{ll}) < 0$) and the fact that the denominator is equal to the sum of $(KF_{kk} + LF_{kl})$ and $(LF_{ll} + KF_{kl})$.

[7] In Grossman's model (1984) there is no effect on wages because of the infinitely elastic labor supply in developing countries.

The inflow of FDI not only results in a lower number of domestic entrepreneurs but may also alter the distribution of individuals becoming entrepreneur. These effects on the distribution of individuals are illustrated in Figure 1 which shows the earnings individuals can earn (wage income W[8] or entrepreneurial profit Π depending on their occupational choice) in relation to their individual entrepreneurial and worker ability (respectively x and y). Following Jovanovic, if one assumes that in a closed economy the best potential entrepreneurs are also the best workers[9] then the most capable persons are effectively drawn into entrepreneurship, i.e. the persons to the right of x_1 in Figure 1[10]. The entry of MNEs changes this distribution of domestic entrepreneurs and workers as foreign firms typically pay on average higher wages than domestic firms ($W_{MNE} > W_{DOM}$) and offer additional benefits to more talented managers/workers[11]. The best domestic entrepreneurs will then prefer to become MNE manager/workers, since they these persons are worse off if they decide to remain entrepreneurs. The result is that foreign direct investment causes not only the number of domestic entrepreneurs to fall ($x_2 - x_1 < x - x_1$) but also the best (domestic) entrepreneurs to become workers. FDI causes the best potential entrepreneurs to choose to be workers since MNEs want to hire the best individuals and therefore implement a wage structure very favorable for people endowed with higher levels of entrepreneurial and worker ability.

The effect of product market selection efficient (foreign) firms combined with the self-selection results of potential entrepreneurs are central in the specification of possible crowding out effects in the empirical model of the next section.

[8] Wage incomes $W_{DOM} = w_{DOM} .y$ and $W_{MNE} = w_{MNE} .y$.
[9] With managerial ability denoted as x and worker ability y, $y = f(x)$ for some strictly increasing function f.
[10] x_1 is the level of entrepreneurial capability for individuals are indifferent between becoming entrepreneur and wage worker.

INSERT FIGURE 1 HERE

3. Empirical model

In line with previous research, we model net entry as the response to departures of profits from long run sustainable profits[12] where the latter are a function of entry/exit barriers. As it is assumed that net entry at time t is the result of decisions taken at time t-1 based on observations of industry structure in t-1, the expected net entry in industry i in period t equals:

$$\text{NET ENTRY}^{*}_{i,t} = \gamma(\text{PROFIT}_{i\,t-1} - \text{PROFIT}^{*}_{i\,t-1}) \quad (2)$$

where $\text{PROFIT}^{*}_{i\,t-1}$ is long run sustainable profits and $0 < \gamma \leq 1$ measures the response rate of net entry to profitable opportunities.

Since actually entering an industry may take some time because of the scarcity of resources and institutional rigidities, net entry itself is modeled as an adjustment process in which the actual adjustment is some fixed proportion of the expected adjustment (Geroski and Masson (1987)):

$$(\text{NET ENTRY}_{i,t} - \text{NET ENTRY}_{i,t-1}) = \delta(\text{NET ENTRY}^{*}_{i,t} - \text{NET ENTRY}_{i,t-1}) \quad (3)$$

with $0 < \delta \leq 1$ being the adjustment coefficient.

[11] Examples are bonuses, stock options, promotion overseas…which essentially means giving the best individual a kind of entrepreneurial income.
[12] Also called limit profits, i.e. profits that do not induce net entry (Bain (1956)).

By combining expressions (2) and (3), separating out the entry and exit terms and distinguishing between domestic and foreign firms, entry and exit by domestic firms in industry i at time t are modeled according to the following response functions[13]:

$$\begin{aligned} DOMENTRY_{i,t} = {} & b_0 + \gamma\delta PCM_{i,t-1} + b_1\gamma\delta DOMGROWTH_{i,t-1} + b_2\gamma\delta IMPGROWTH_{i,t-1} + \\ & b_3\gamma\delta PHYSCAP_{i,t-1} + b_4\gamma\delta SCALE_{i,t-1} + \\ & (1-\delta)DOMENTRY_{i,t-1} + b_5(1-\delta)DOMEXIT_{i,t-1} + \\ & b_6(1-\delta)FORENTRY_{i,t-1} + b_7(1-\delta)FOREXIT_{i,t-1} + b_8FORPRES_{i,t-1} \end{aligned} \quad (4)$$

$$\begin{aligned} DOMEXIT_{i,t} = {} & b_0 + \gamma\delta PCM_{i,t-1} + b_1\gamma\delta DOMGROWTH_{i,t-1} + b_2\gamma\delta IMPGROWTH_{i,t-1} + \\ & b_3\gamma\delta PHYSCAP_{i,t-1} + b_4\gamma\delta SCALE_{i,t-1} + \\ & (1-\delta)DOMENTRY_{i,t-1} + b_5(1-\delta)DOMEXIT_{i,t-1} + \\ & b_6(1-\delta)FORENTRY_{i,t-1} + b_7(1-\delta)FOREXIT_{i,t-1} + b_8FORPRES_{i,t-1} \end{aligned} \quad (5)$$

The dependent variables $DOMENTRY_{i,t}$ and $DOMEXIT_{i,t}$ are expressed as entry and exit rates defined as the number of domestic entrants (exiters) in year t divided by the total number of firms in the industry in year t-1.

Because of the adjustment behavior assumed in expression (3), lagged entry (exit) is predicted to have a positive sign[14] in the DOMENTRY (DOMEXIT) equation; the larger the coefficient of this variable the slower the adjustment in entry.

The inclusion of lagged exit and entry variables in the equations controls for the fact that less efficient incumbents are replaced/displaced by more efficient entrants. In this regard, the

[13] Modeling (domestic and foreign) entry and exit separately as gross variables instead of modeling net entry, prevents that symmetry is imposed on the entry and exit processes.
[14] Likewise Gort and Konakayama (1982) argue that entry may stimulate (potential) entrepreneurs to consider entry as well, although autoregressive models of entry suggest that previous entry may deter current entry.

sign of the lagged exit variable ($DOMEXIT_{i,t-1}$) in the entry equation is hypothesized to be positive since entry consists to some extent of the replacement of exiting firms, with exit providing room for potential entrepreneurs in the industry (Sleuwaegen and Dehandschutter (1991), Rosenbaum and Lamort (1992) Johnson and Parker (1994)). On the other hand, displacement relates to the positive effect of entry on exit, that is, from new entry that results in stronger competitive pressure leading to the exit of incumbent firms. Consequently, the coefficient of the lagged entry variable ($DOMENTRY_{i,t-1}$) in the exit equation is expected to be positive.

Relevant profits in the net entry equation are assumed to be composed of industry wide price-cost margins ($PCM_{i,t-1}$), measured as industry profitability to sales in the previous year adjusted for industry growth $DOMGROWTH_{i,t-1}$ (i.e. the past growth rate of domestic industry sales[15]). Previous research has shown that entry is higher in more profitable and rapidly growing industries, while exit is stronger in industries where profits and market growth are lower (Siegfried and Evans (1994), Geroski (1995)). The coefficients of these variables are hypothesized to be positive in the entry-equation while negative in the exit-equation. In line with the theoretical displacement arguments (Grossman 1994) the strength of import competition is included in the empirical model as an additional factor impacting profits and thus net entry. The variable $IMPGROWTH_{i,t-1}$ (measured as the growth rate of imports in year t-1) is assumed to negatively affect domestic entry and positively domestic exit .

Distinguishing between domestic and foreign entry/exit enables one to analyze the impact of FDI on domestic entrepreneurship. In line with the theoretical model discussed in section 2, lagged foreign entry ($FORENTRY_{i,t-1}$) is predicted to influence negatively (positively) domestic entry (exit) due to stronger competition on the product as well as labor market. Likewise, the coefficient of lagged foreign exit ($FOREXIT_{i,t-1}$) is hypothesized to be positive

[15] The domestic market measures the total sales volume and is calculated as the sum of domestic sales and imports minus exports

(negative) in the entry (exit) -equation. The variables $FORENTRY_{i,t-1}$ (foreign entry) and $FOREXIT_{i,t-1}$(foreign exit) are defined as rates analogous to the dependent variables (i.e. the number of foreign firms entering (exiting) in year t-1 divided by the total number of firms in year t-2)

A complete analysis of the effect of FDI on domestic entrepreneurship requires structural long term effects also be taken into account. The literature on linkages between foreign multinationals and domestic firms in host countries has discussed different channels through which FDI may foster domestic entrepreneurship (see for an overview UNO (2001)). Managerial skills may spill over to domestic firms because of domestic managers leaving foreign firms and starting up their own business, and/or by domestic entrepreneurs watching successes and mistakes of foreign firms (Caves (1996)). Further on, networking activities of foreign firms may induce domestic entry through buyer-supplier relations and/or knowledge spillovers. Recent theoretical work in international business increasingly modeled the positive effects of FDI on domestic entrepreneurship through backward and forward linkages, showing that MNEs may foster the development of domestic firms in the host country (Rodriguez-Clare (1996), Markusen and Venables (1999)). The inclusion of the variable $FORPRES_{i,t-1}$ controls for the existence of these positive networking, learning and linkage effects within but also between industries[16]. This variable, defined as the relative number of foreign firms, measures foreign presence in terms of the number of firms in related industries[17] in Belgium. Linkage effects are expected to be more important in industries where foreign presence is higher, but the results should however be interpreted carefully. As largely discussed within the literature on productivity spillovers (see for an overview Gorg and Strobl (2001)), foreign presence is an indirect and thus imperfect measure of the extent of positive linkages that may develop between foreign and domestic firms.

[16] In order to incorporate positive effects between for example foreign MNEs and domestic suppliers.

A number of proxies for barriers to entry are hypothesized to affect the level of (unobservable) long run profits ($PROFIT^{*}_{i\,t-1}$ in (2)) since they impose additional costs to new entrants. Physical capital intensity ($PHYSCAP_{i,t-1}$ defined as the logarithm of the value of industry's fixed assets over total employment in the industry) and the scale intensity of industries ($SCALE_{i,t-1}$ defined as the logarithm of the median size in terms of employment) have been included as factors hindering entry. Since entry barriers also act as exit barriers, the effects of the variables $PHYSCAP_{i,t-1}$ $SCALE_{i,t-1}$ are predicted to be negative both in the entry equation and the exit equation. In industries that require large physical investments and/or a large scale of operation in order for firms to break even, excess profits persist longer without inducing entry. At the same time large investments discourage exit if they have a sunk cost character. Moreover with falling profits, firms typically postpone the decision to exit given the limited alternative use of industry specific assets and the value of waiting if profits are uncertain and have shown important variation in the past (Dixit and Pindyck (1994)).

4. Results

The empirical model is estimated using data on 129 manufacturing industries in Belgium defined at the NACE 3-digit level[18]. As observations for the period 1990-1995 are pooled, year dummies allow for time specific effects (Kmenta (1997)). The use of a censored estimation procedure was necessary to account for zero cells in the data set (Tobin (1958)).

Since the variance of entry/exit rates differed substantially across industries, we estimated industry-specific variances (σ^2_i) following Dunne and Roberts (1991):

[17] Related industries are defined as industries belonging to the same NACE-2 digit level, given the unavailability of more precise information (e.g. input-output tables).

$$(\sigma^2_i) = (1/5)\Sigma e^2_{it}$$

where the e_{it} are the residuals of estimating (4) and (5). These industry-specific variances were used to obtain weighted Tobit estimates in the entry and exit equations. As Tobit-coefficients cannot be interpreted as ordinary regression coefficients, multiplying the coefficients with the fraction reported in the last row of Table 3 ensures a proper discussion of the estimated results[19].

INSERT TABLE 3 HERE

Since the dependent and independent variables are expressed either as entry/exit rates, growth rates, shares or logarithms, the reported coefficients can be interpreted as (quasi) elasticities. The coefficients of lagged DOMENTRY and DOMEXIT in respectively the entry and exit equations indicate that 70 to 75% of the expected adjustment in net entry happens within the same year, as the adjustment rate δ is 0.695 (= 1-0.331*.0.921) for domestic entry and 0.756 (= 1-0.261*0.934) for domestic exit.

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[18] NACE : General industrial classification of economic activities within the European Communities.

[19] McDonald and Mofitt (1980) showed that the change in the dependent variable is composed of (1) the change in the dependent variable of those observations where entry (exit) > 0, weighted by the probability of entry (exit) being above zero and (2) the change in the probability of entry (exit) being zero weighted by the expected value of the dependent variable if above zero. The fractions, showing the fraction of the Tobit-coefficient due to observations where entry (exit) > 0, are 0.921 and 0.934 respectively, implying that more than 90% of the total change in the domestic entry/exit rate (resulting from changes in the independent variables) is generated by marginal changes in the number of entering domestic firms, whereas less than 10% is generated by changes in the probability of domestic firms entering at all.

Consistent with previous studies on gross entry, the results show that domestic entry is higher in more profitable and/or growing industries. Past profitability (PCM) signals profitable opportunities to domestic entrepreneurs, while a strong growth of the domestic market (DOMGROWTH) accommodates a larger number of firms.

The results in table 3 support the hypothesis that international competition hinders the formation of domestic entrepreneurs. The negative and significant coefficients of IMPGROWTH and FORENTRY clearly suggest that import competition and the inflow of FDI have a negative effect on the entry of domestic entrepreneurs. Strong import competition causes prices to fall on product markets and discourages domestic entrepreneurs to enter the shrinking the domestic market. The immediate negative effect of import competition on domestic entry is -0.091 (-0.099*0.921) while the total effect through the partial adjustment process is -0.131 (-0.099*0.921/0.695). The negative effect of foreign entry is significantly larger, suggesting that the inflow of FDI impedes the entry of domestic entrepreneurs because of stronger competition on the product market as well as skimming off the (best) workers on the labor market. The immediate effect of foreign entry is -0.214 (= -0,237*0,921), while the total response of domestic entry on foreign entry is -0.702 (= -0,237*0,921/0,305). As the coefficients can be interpreted as elasticities, an extra FDI inflow of 10% would then cause, ceteris paribus, the entry rate of domestic firms to fall with 7% in the long run. The insignificant coefficient of FOREXIT suggests that new domestic firms do not easily replace foreign firms leaving Belgium.

The results for the domestic exit-equation also support the crowding out effect of domestic firms by foreign firms and to a lesser extent by import competition. The positive coefficient of FORENTRY demonstrates that the inflow of FDI forces domestic entrepreneurs to exit, because of lower prices on product markets and/or higher wages on the labor market (encouraging domestic entrepreneurs to become wage workers). The positive albeit insignificant coefficient of FOREXIT in this equation may reflect that the exit of foreign

firms directly results in the exit of domestic supplying/buying firms, however further evidence is necessary in order to validate this explanation.

The results also show evidence of structural effects of foreign direct investment fostering domestic entrepreneurship. The positive coefficient for foreign presence (FORPRES) in the entry-equation indicates that more new domestic firms are formed in industries characterized by a high foreign (incumbent) presence, suggesting the importance of demonstration, networking and spillover effects. The estimated coefficient suggests that in the limiting case of complete foreign presence in industries, domestic entry rates could increase with a maximum of 4.8 per cent (= 0.051*0.923), relative to industries without a foreign presence. Likewise, the negative coefficient of FORPRES in the exit-equation indicates that the exit of local firms is substantially smaller in industries where foreign firms are relatively more present. The structural effect is especially important for industries where the potential supply of domestic entrepreneurship is limited as is the case for some new high tech industries in Belgium. In such cases crowding out effects may be dominated by the longer term positive structural effects.

These positive effects of foreign presence on domestic entrepreneurship are in line with Gorg and Strobl (2000) who found a net positive effect of FDI on local entrepreneurship in Ireland. However, their analysis did not distinguish between positive structural effects and negative crowding out effects, as they focused on a rather long time period (1970-1995) and as foreign based MNEs typically invested in Ireland in industries which were relatively small before the entry of MNEs.

The results in Table 3 further demonstrate the existence of important impediments to entry and exit because of capital investments and scale effects. The negative and significant coefficients of PHYSCAP and SCALE demonstrate that barriers to entry are higher in more capital and scale intensive industries resulting in less entry of domestic entrepreneurs in these

industries. The observed symmetry between entry and exit barriers can be attributed to sunk costs, as the sunkness of investments directly discourages exit as no (or limited) valuable alternative use for the investments exists. At the same time sunk costs provide incumbents with a credible threat to remain in the industry thereby deterring entry of new firms. Industries characterized by lower barriers to entry and exit show a persistent higher turnover of firms than industries in which barriers to entry and exit are substantial[20].

The positive signs of respectively DOMEXIT in the domestic entry-equation and DOMENTRY in the domestic exit-equation, confirm the importance of turbulence variations across industries. New domestic entrants induce the exit of incumbent local firms, while domestic firms exiting the industry are replaced by new local firms however at a much lower pace.

5. Conclusion

In analyzing firm entry and exit in the small open economy of Belgium, this paper presents evidence suggesting that import competition and foreign direct investment crowd out domestic entrepreneurs on both product and labor markets. In line with theoretical predictions, import competition is found to discourage domestic entry, while the inflow of foreign direct investment decreases domestic entry and increases domestic exit. However, the empirical results suggest that the importance of positive long term structural effects - learning,

[20] In order to check the robustness of the results, research & development- and advertising-intensity proxying strategic entry barriers next to the (traditional) structural barriers to entry like capital intensity and scale intensity were included as additional explanatory variables in the model. However, as also noted in some empirical studies (Siegfried and Evans (1994)), their (insignificant) positive coefficients suggested that these variables especially signaled profitable opportunities across industries more than they discouraged domestic entry. The same result emerged for industry concentration, which is (theoretically) assumed to increase incumbents' effective deterrence of potential entrants. However at the same time the relatively higher profits in these industries may encourage entry; traditionally empirical research has experienced difficulties in determining the causal interference between concentration and entry.

demonstration, networking and linkage effects- between foreign and domestic firms can moderate or even reverse crowding out effects.

The policy implications to the reported findings in this paper are manifold but need to be properly qualified. In the short run a policy of (aggressively) attracting foreign direct investment in industries heavily populated by domestic firms, may have a significant negative effect on domestic entrepreneurship at least in the short run. Within a longer term structural perspective FDI and domestic entrepreneurship may become complements because of the many possible positive linkages. Past experiences in some countries show however that this is not a natural process but that it requires the implementation of specific programs in order to maximize the linkages between foreign and domestic firms. Especially for the development of new industries such a policy may prove to be very fruitful.

Moreover, in a dynamic context the host country may enjoy important welfare gains following the inflow of foreign firms, since the crowding out effect of FDI typically results in the elimination of the least efficient domestic firms. Foreign firms are also better equipped to overcome some of the structural barriers to entry, including high sunk costs and scale economies, which typically hinder the entry and development of new domestic firms.

It is also important to bear in mind that this paper has operationalized entrepreneurship in terms of the creation of new firms, thereby abstracting from the potential positive effects of FDI on the behavior of established domestic firms.

It follows that the impact on domestic entrepreneurship is only one of the many effects FDI has on the macro-economic performance of host countries. In order to formulate appropriate policy recommendations, all direct and indirect effects of FDI on host countries' economies need to be assessed within a broader macro-economic framework. Such an analysis however is clearly beyond the scope of the present paper.

Table 1: Entry rate[21], import competition and FDI, 1990

%	***entry rate[22]***	***import share[23]***	***inward FDI stock***
Belgium	10.9	71.2	18.1
Denmark	14.3	30.1	7.1
France	13.3	22.6	7.2
Germany	20.1	26.1	7.4
Ireland	n/a	53.8	22.5
Italy	6.5	20.7	5.3
Netherlands	14.5	49.6	25.9
Portugal	10.7	45.4	7.6
Spain	n/a	20.5	13.3
United Kingdom	5.9	27.1	22.3

[21] Due to major differences in legislation between countries, exit rates are not comparable across countries.
[22] Data for France and Portugal are 1989 figures. Source: Eurostat (1993), SME Observatory
[23] in % of GDP; Source: Eurostat

Table 2: Number of domestic firms and foreign firms in Belgium, 1990-1995

	Domestic firms	***Foreign firms***
1990	15582	966
1991	16687	1000
1992	17402	983
1993	17756	968
1994	17461	957
1995	16743	923

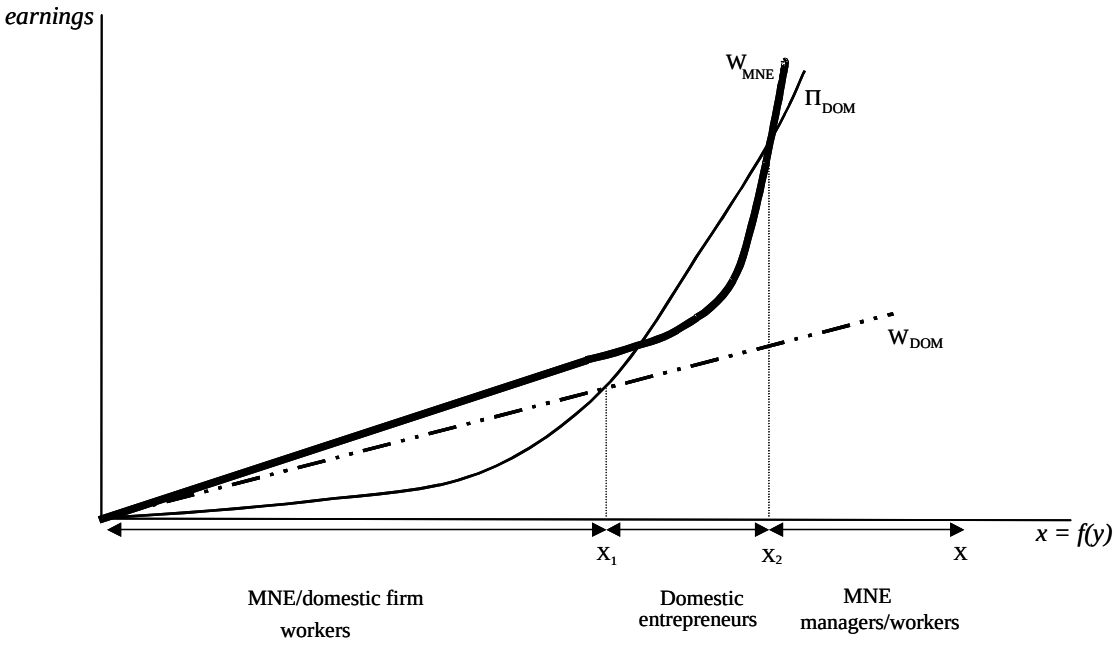
Table 3: OLS regression results for domestic entry and exit

Tobit-coefficient (standard error) N = 645	***$DOMENTRY_{i,t}$***	***$DOMEXIT_{i,t}$***
CONSTANT	0.145****	0.066****
	(0.017)	(0.015)
$PCM_{I,t-1}$	0.166****	0.047
	(0.030)	(0.031)
$DOMGROWTH_{i,t-1}$	0.120****	-0.022***
	(0.027)	(0.007)
$IMPGROWTH_{i,t-1}$	-0.099****	0.016*
	(0.019)	(0.010)
$PHYSCAP_{i,t-1}$	-0.013****	-0.008***
	(0.002)	(0.002)
$SCALE_{i,t-1}$	-0.014****	-0.001
	(0.002)	(0.002)
$DOMENTRY_{i,t-1}$	0.331****	0.121****
	(0.026)	(0.023)
$DOMEXIT_{i,t-1}$	0.071**	0.261****
	(0.036)	(0.033)
$FORENTRY_{i,t-1}$	-0.232**	0.186**
	(0.099)	(0.095)
$FOREXIT_{i,t-1}$	0.254	0.244
	(0.184)	(0.173)
$FORPRES_{i,t-1}$	0.051***	-0.071****
	(0.017)	(0.015)
YEARDUMMIES	YES	YES
σ	0.033	0.028
fraction	0.921	0.934
LogLikelihood (L_1)	1529.5	1502.6
LogLikelihood (L_0)[24]	239.9	456.5

* $p < 0.10$;
** $p < 0.05$;
*** $p < 0.01$;
**** $p < 0.001$;

[24] L_0 is the loglikelihood of the model with all coefficients, except the intercept term, equal to zero; L_1 is the loglikelihood of the proposed model.

Figure 1: Entrepreneurial choice and FDI inflow



Π_{DOM} : entrepreneurial profit of domestic firms
W_{DOM} : wages in domestic firms
W_{MNE} : wages in foreign firms
x: individuals' entrepreneurial ability
y: individuals' worker ability

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ANNEX 1

Descriptive statistics of the independent variables

	Mean	***Standard deviation***
$PROFIT_{i, t-1}$	0.093	0.044
$DOMGROWTH_{i, t-1}$	0.047	0.094
$PHYSCAP_{i, t-1}$	6.981	0.710
$SCALE_{i, t-1}$	2.417	0.943
$DOMENTRY_{i, t-1}$	0.109	0.123
$DOMEXIT_{i, t-1}$	0.064	0.067
$IMPGROWTH_{i, t-1}$	0.025	0.267
$FORENTRY_{i, t-1}$	0.009	0.063
$FOREXIT_{i, t-1}$	0.006	0.052
$LINK_{i, t-1}$	0.054	0.298

ANNEX 2

Correlation matrix of the independent - lagged variables

	PROFIT	DOM GROWTH	PHYS CAP	SCALE	DOM-ENTRY	DOM-EXIT	IMP-GROWTH	FOR-ENTRY	FOR-EXIT	LINK
PROFIT	1.000	0.018	0.270*	0.017	0.105*	0.027	- 0.011	0.130*	0.013	- 0.047
DOMGROWTH		1.000	- 0.034	- 0.037	0.212*	- 0.034	0.415*	0.107*	- 0.009	0.051
PHYSCAP			1.000	0.471*	- 0.078	- 0.123*	- 0.013	0.116*	0.287*	0.010
SCALE				1.000	- 0.020	- 0.056	0.033	0.099*	0.008	0.083
DOMENTRY					1.000	0.018	0.024	- 0.024	- 0.070	0.022
DOMEXIT						1.000	0.019	- 0.044	0.051	- 0.083
IMPGROWTH							1.000	0.015	- 0.017	0.062
FORENTRY								1.000	- 0.013	0.234*
FOREXIT									1.000	0.115*
LINK										1.000

* $p < 0.05$